

## TIN

(Data in metric tons of tin content, unless otherwise noted)

**Domestic Production and Use:** In 2001, no tin was mined domestically. Production of tin at the only U.S. tin smelter, at Texas City, TX, stopped in 1989. Twenty-five firms consumed about 77% of the primary tin. The major uses were as follows: cans and containers, 30%; electrical, 20%; construction, 10%; transportation, 10%; and other, 30%. On the basis of the New York composite price, the estimated values of some critical items were as follows: primary metal consumed, \$278 million; imports for consumption, refined tin, \$326 million; and secondary production (old scrap), \$50 million.

<b>Salient Statistics—United States:</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001<sup>e</sup></b>
Production:					
Secondary (old scrap)	7,830	8,500	7,750	6,600	7,000
Secondary (new scrap)	4,540	7,800	8,650	8,450	8,500
Imports for consumption, refined tin	40,600	44,000	47,500	44,900	45,000
Exports, refined tin	4,660	5,020	6,770	6,640	6,800
Shipments from Government stockpile excesses	11,700	12,200	765	12,000	12,000
Consumption, reported:					
Primary	36,200	37,100	38,000	38,100	38,700
Secondary	8,250	8,620	8,890	8,940	9,050
Consumption, apparent	55,300	60,600	59,700	57,160	56,900
Price, average, cents per pound:					
New York market	264	261	255	255	219
New York composite	381	373	366	370	326
London	256	251	245	246	212
Kuala Lumpur	252	246	241	244	225
Stocks, consumer and dealer, yearend	11,200	10,500	10,700	10,400	10,700
Net import reliance <sup>1</sup> as a percentage of apparent consumption	86	85	85	88	88

**Recycling:** About 18,000 tons of tin from old and new scrap was recycled in 2001. Of this, about 7,000 tons was recovered from old scrap at 5 detinning plants and 46 secondary nonferrous metal processing plants.

**Import Sources (1997-2000):** China, 22%; Peru, 22%; Indonesia, 16%; Brazil, 13%; Bolivia, 12%; and other, 15%.

**Tariff:** Most major imports of tin, including unwrought metal, waste and scrap, and unwrought tin alloys, enter duty free.

**Depletion Allowance:** 22% (Domestic), 14% (Foreign).

**Government Stockpile:** The Defense National Stockpile Center (DNSC) no longer sells tin on a monthly basis. Two DNSC tin sales are now held each year, normally in the spring and in the fall, for about 6,000 tons each. The DNSC announced that its Annual Materials Plan for fiscal year 2002 calls for sales of up to 12,000 tons of stockpile tin. Stockpile tin is warehoused at four depots, with the largest holdings at Hammond, IN, and Baton Rouge, LA.

### Stockpile Status—9-30-01<sup>2</sup>

Material	Uncommitted inventory	Committed inventory	Authorized for disposal	Disposal plan FY 2001	Disposals FY 2001
Pig tin	53,019	6,974	53,019	12,000	5,226

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**Events, Trends, and Issues:** The Steel Recycling Institute (SRI), Pittsburgh, PA, announced that the domestic steel can recycling rate was 58% in 2000 compared with 58% in 1999. Tin, as well as steel, is recovered in can recycling. SRI noted that 200 million Americans had access to steel can recycling programs.

Tin prices continued to decline in 2001. Industry observers attributed lower prices to an oversupply of tin in the market. World tin consumption also was believed to have declined somewhat during the year.

The world and domestic tinplate industry continued to be characterized by more mergers and consolidations. In most cases, this resulted in some tin mill capacity being eliminated.

The world's major tin research and development laboratory, ITRI Ltd. (based in the United Kingdom), reached its sixth year as a privatized institution. The laboratory, which is funded by numerous tin producing and consuming firms, has focused its efforts on possible new uses for tin that would take advantage of tin's relative nontoxicity to replace other metals in products—lead-free solders, antimony-free flame-retardant chemicals, and lead-free shotgun pellets.

### **World Mine Production, Reserves, and Reserve Base:**

	Mine production		Reserves <sup>3</sup>	Reserve base <sup>3</sup>
	<u>2000</u>	<u>2001<sup>e</sup></u>		
United States	—	—	20,000	40,000
Australia	9,000	9,000	210,000	600,000
Bolivia	12,000	12,000	450,000	900,000
Brazil	13,000	15,000	540,000	2,500,000
China	97,000	95,000	2,100,000	3,900,000
Indonesia	48,000	50,000	800,000	900,000
Malaysia	6,000	7,000	1,200,000	1,400,000
Peru	37,000	38,000	710,000	1,000,000
Portugal	1,000	1,000	70,000	80,000
Russia	5,000	5,000	300,000	350,000
Thailand	2,000	2,000	340,000	400,000
Other countries	<u>8,000</u>	<u>8,000</u>	<u>180,000</u>	<u>200,000</u>
World total (may be rounded)	238,000	242,000	6,900,000	12,000,000

**World Resources:** U.S. resources of tin, primarily in Alaska, were insignificant compared with those of the rest of the world. Sufficient world resources, principally in western Africa, southeastern Asia, Australia, Bolivia, Brazil, China, and Russia are available to sustain recent annual production rates well into the 21st century.

**Substitutes:** Aluminum, glass, paper, plastic, or tin-free steel substitute for tin in cans and containers. Other materials that substitute for tin are epoxy resins for solder; aluminum alloys, copper-base alloys, and plastics for bronze; plastics for bearing metals that contain tin; and compounds of lead and sodium for some tin chemicals.

<sup>e</sup>Estimated. — Zero.

<sup>1</sup>Defined as imports - exports + adjustments for Government and industry stock changes.

<sup>2</sup>See Appendix B for definitions.

<sup>3</sup>See Appendix C for definitions.